denotant totas coefficientes datas terminorum ſingulorum in ſerie cum ſignis ſuis $+$ & $-$, nempe A primi termini coefficientem $\frac{\frac{1}{\eta}a}{re}$, B ſecundi coefficientem $\frac{\frac{1}{\eta}b - sfA}{\overline{r+1},e}$, C tertii coefficientem $\frac{\frac{1}{\eta}c - \overline{s-1}\,fB - tgA}{\overline{r+2},e}$, & ſic deinceps.

Demonſtratio.

Sunto juxta Propoſitionem tertiam,

	Curvarum Ordinatæ		& earundem areæ.
1.	$\theta eA + {}^{\theta}_{+\lambda\eta} fAz^{\eta} + {}^{\theta}_{+2\lambda\eta} gAz^{2\eta} + {}^{\theta}_{+3\lambda\eta} hAz^{3\eta}$ &c.		$Az^{\theta}R^{\lambda}$.
2	$\cdots\cdots \overline{\theta+\eta},eBz^{\eta} + {}^{\overline{\theta+\eta}}_{+\lambda\eta} fBz^{2\eta} + {}^{\overline{\theta+\eta}}_{+2\lambda\eta} gBz^{3\eta}$ &c.	$z^{\theta-1}R^{\lambda-1}$.	$Bz^{\theta+\eta}R^{\lambda}$.
3	$\cdots\cdots\cdots\cdots + \overline{\theta+2\eta},eCz^{2\eta} + {}^{\overline{\theta+2\eta}}_{+\lambda\eta} fCz^{3\eta}$ &c.		$Cz^{\theta+2\eta}R^{\lambda}$.
4	$\cdots\cdots\cdots\cdots\cdots\cdots + \overline{\theta+3\eta},eDz^{3\eta}$ &c.		$Dz^{\theta+3\eta}R^{\lambda}$.

Et ſi ſumma ordinatarum ponatur æqualis ordinatæ $a + bz^{\eta} + cz^{2\eta} + dz^{3\eta} +$ &c. in $z^{\theta-1}R^{\lambda-1}$, ſumma arearum $z^{\theta}R^{\lambda}$ in $A + Bz^{\eta} + Cz^{2\eta} + Dz^{3\eta} +$ &c. æqualis erit areæ Curvæ cujus iſta eſt ordinata. Æquentur igitur Ordinatarum termini correſpondentes, & fiet $a = \theta eA$, $b = {}^{\theta}_{+\lambda\eta} fA + {}^{\theta}_{+\eta} eB$, $c = {}^{\theta}_{+2\lambda\eta} gA + {}^{\theta+\eta}_{+\lambda\eta} fB + \overline{\theta+2\eta},eC$ &c. & inde $\frac{a}{\theta e} = A$. $\frac{b - \overline{\theta+\lambda\eta},fA}{\overline{\theta+\eta},e} = B$. $\frac{c - \overline{\theta+2\lambda\eta},gA - \overline{\theta+\eta+\lambda\eta},fB}{\overline{\theta+2\eta},e} = C$. Et ſic deinceps in infinitum.

nitum. Pone jam $\frac{\theta}{\eta} = r$. $r + \lambda = s$. $s + \lambda = t$ &c. & in area $z^{\theta}R^{\lambda} \times A + Bz^{\eta} + Cz^{2\eta} + Dz^{3\eta}$ &c. ſcribe ipſorum A, B, C, &c. valores inventos & prodibit ſeries propoſita. Q. E. D.

Et notandum eſt quod Ordinata omnis duobus modis iu ſeriem reſolvitur. Nam index η vel affirmativus eſt poteſt vel negativus. Proponatur Ordinata $\frac{3k - lzz}{zz\sqrt{kz - lz^3 + mz^4}}$. Hæc vel ſic ſcribi poteſt $z^{-\frac{3}{2}} \times \overline{3k - lzz} \times \overline{k - lzz + mz^3}|^{-\frac{1}{2}}$, vel ſic $z \times \overline{-l + 3kz^{-2}} \times \overline{m - lz^{-1} + kz^{-3}}|^{-\frac{1}{2}}$. In caſu priore eſt $a = 3k$. $b = 0$. $c = -l$. $e = k$. $f = 0$. $g = -l$. $h = m$. $\lambda = -\frac{1}{2}$. $\eta = 1$. $\theta - 1 = -\frac{5}{2}$. $\theta = -\frac{3}{2} = r$. $s = -1$. $t = -\frac{1}{2}$. $v = 0$. In poſteriore eſt $a = -l$. $b = 0$. $c = 3k$. $e = m$. $f = -l$. $g = 0$. $h = 1$. $\lambda = -\frac{1}{2}$. $\eta = -1$. $\theta - 1 = 1$. $\theta = 2$. $r = -2$. $s = -1\frac{1}{2}$. $t = -1$. $v = -\frac{1}{2}$. Tentandus eſt caſus uterque. Et ſi ſerierum alterutra ob terminos tandem deficientes abrumpitur ac terminatur, habebitur area Curvæ in terminis finitis. Sic in exempli hujus priore caſu ſcribendo in ſerie valores ipſorum a, b, c, e, f, g, h, λ, θ, r, s, t, v, termini omnes poſt primum evaneſcunt in infinitum & area Curvæ prodit $-2\sqrt{\frac{k - lzz + mz^3}{z^3}}$. Et hæc area ob ſignum negativum adjacet abſciſſæ ultra ordinatam productæ. Nam area omnis affirmativa adjacet tam abſciſſæ quam ordinatæ, negativa vero cadit ad contrarias partes ordinatæ & adjacet abſciſſæ productæ, manente ſcilicet ſigno Ordinatæ. Hoc modo ſeries alterutra & nonnunquam utraque ſemper terminatur & finita evadit ſi Curva geometrice quadrari poteſt. At ſi Curva talem quadraturam non admittit, ſeries utraq; continuabitur in infinitum, & ea-